PNE-407

PROJECT CHARIOT--FINAL REPORT

ARCHAEOLOGICAL SURVEY AND EXCAVATIONS

AT

OGOTORUK CREEK, NORTHWESTERN ALASKA

Contract Number AT(04-3)-310

Between the

University of Alaska

and the

United States Atomic Energy Commission

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by

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PREFACE

Through a contract between the United States Atomic Energy Commission and the University of Alaska, the Department of Anthropology and Geography performed an archaeological survey of the vicinity of the mouth of Ogotoruk Creek on the northwest coast of Alaska. It is at this location, seven miles south of Cape Thompson, that the AEC contemplates an experiment in harbor construction through the use of underground nuclear explosions. It was recognized that Project Chariot (one aspect of the "atoms for peace" program, Operation Plowshare) would, of necessity, be destructive to any archaeological or palaeontological remains in the immediate vicinity. Since this could have meant a permanent loss both to science and the public at large, the AEC made the decision to subsidize the necessary field studies first, to evaluate the situation as to the presence of sites, likelihood of destruction, etc., and secondly, to perform such salvage excavations as seemed indicated and feasible in order to mitigate the possible loss.

Parts of two seasons were spent in the field--from July 26 until September 2, 1959, and July 15 through August 1, 1960. Field personnel were the following: Archaeologist (both seasons), Frederick Hadleigh-West, Assistant Professor, Department of Anthropology and Geography, University of Alaska; Field Assistants for 1959, Kenneth E. Howell, then of College, Alaska, and Elmer Ipalook of Kotzebue; for 1960, Ronald B. Boyce of College, Alaska, and Jack E. DeVille of Cordova, Alaska. About halfway through

the 1959 season, Henry Nashookpuk of Point Hope was hired as a shovel hand.

As is the case with any such undertaking, debts of gratitude are incurred on all sides: Dr. Ivar Skarland, Head of the Department of Anthropology and Geography at the University of Alaska deserves the credit for initiating and following through the proposal for salvage work in connection with Project Chariot. He has, in addition, lent continuing support to all its phases. The administrative officers of the University were also active in the efforts to have this project established and were largely instrumental in the accomplishment of that aim. Dr. J. Louis Giddings of the Haffenreffer Museum, Brown University, was, as always, most helpful and cooperative on the several occasions his advice was sought during the period in which the work was carried out. My assistants deserve special thanks for the quality and quantity of their work and for the interest they displayed in its various, and often tedious, aspects. Identification of faunal remains was cheerfully performed by Dr. Otto William Geist of the University of Alaska. Both he and Dr. Skarland also aided in the identification of some problematical artifacts. Dr. William O. Pruitt of the University of Alaska and Mr. Robert A. Rausch of the Alaska Department of Fish and Game were also kind enough to identify some of the faunal material. Professor Charles J. Keim of the University of Alaska lent real assistance in his identification and chronological placement of some of the more exotic cartridge cases uncovered in the upper levels. For their support

at the Chariot Site, thanks are extended to the following Project Officers for the AEC--Mr. James A. Sugden (1959), Mr. Merle Smith (1960), and Mr. Henry Schlacks (1960); Mr. Roland W. Wallstedt, Deputy Support Coordinator of the Lawrence Radiation Laboratory; and Mr. Ralph Chase, representative of Holmes and Narver Incorporated of Los Angeles. There were several persons connected in various ways with the Atomic Energy Commission who interested themselves in seeing this project established. Some of these gentlemen are known to me, some are not, and I cannot bring myself to make the invidious distinctions concomitant to naming those two or three whose efforts are known. To these men a most particular note of gratitude is due; probably the major part of the success in setting up the archaeological project was due to their interest and efforts. Finally, to my colleagues from other disciplines, who were also engaged in various field studies of the area--to these people, thanks. It would be difficult indeed to express the pleasure I had in their company and the intellectual stimulation gained from the many conversations held with them.

Any success which may have attended this enterprise is due, most largely, to the aid and assistance rendered by these and other people.

INTRODUCTION

The Geographic Setting:

The setting for the work described in this report is the lower end of Ogotoruk Creek Valley located approximately 68°06'N, 165°45'W on the northwest coast of Alaska. Ogotoruk Creek, in that portion of its course, is aligned in a north-northeast--south-southwest orientation. For convenience, up-valley directions will be referred to simply as north. The lowermost end of Ogotoruk Creek is marked by a small lagoon the size of which must vary according to conditions at the mouth. The actual mouth of the creek, where it debouches into the Chukchi Sea, is subject to closure at which times there is evident some damming effect. Communication with the sea is apparently not completely impeded, however, and presumably takes place by a rather rapid seepage through the beach ridge which is composed of fairly course materials. The creek for most of its course is a braided stream with a rather low normal flow volume.

The valley, at its lower end, is about two miles wide. The ridges which form its walls rise to elevations of over seven hundred feet, with high points rising another hundred feet and more. The flood plain proper tends to be rather marshy and is occupied by grasses and sedges. The valley floor for the most part is covered with tussock heath vegetation and with occasional groups of low willows. There are no trees; it is an area of true tundra.

Long-term climatic data are not available for Ogotoruk Creek. Point Hope, twenty-six miles to the north, has a January mean temperature of -3.9°F. and a July mean of 43.9°F. Average minimum temperature is -13.5° for January, with the extreme low recorded

temperature being -47°. These figures, of course, reflect maritime influence on the local climate. The presence, throughout most of the year, of windy conditions, greatly increases their feelable effect. The average annual precipitation at Point Hope is 10.21 inches. It may be assumed that these values would closely approximate those for Ogotoruk Creek. Wind conditions, however, in such a hilly environment would probably tend to be more local. Ogotoruk Creek Valley seems to have the reputation of being an exceptionally windy area. Certainly this was true through most of the summers of 1959 and 1960.

The nearest permanent settlements are Point Hope as mentioned above and Kivalina about forty-five miles southeast. The length of time that Kivalina has been occupied is not known; Point Hope, from archaeological evidence, appears to have been a site of Eskimo occupation for some two thousand years (Larsen & Rainey, 1948). The question which must arise after a review of the archaeology of Ogotoruk Creek--why there was not a more extensive settlement there--must be explained in some measure by the smallness of the valley itself and, otherwise, by ecological factors which spring in part from the valley size, its topography, etc. These questions will be treated in a later section.

History of Previous Work:

So far as is known the only archaeological work done previous to that performed by this survey was a brief reconnaissance executed by J. Louis Giddings of Brown University and his companion for the summer in work farther south, Hans-Georg Bandi of the University of Berne. Giddings and Bandi made their visit to the Chariot Site on 10 July 1959 at the behest of Ernest D. Campbell, Field Coordinator

of AEC's Environmental Program there. At that time the status of the University of Alaska's project was unsure.

SUMMARY OF WORK ACCOMPLISHED

Methods of Investigation:

The procedures followed and work occomplished in this survey were largely determined by three factors: (1) imminence of destruction of sites, (2) time available, and (3) personnel available. The first factor confined the limits of the survey to the region of the mouth of Ogotoruk Creek. After reconnaissance of the area disclosed the presence of four sites, it then became possible to rank these in importance according to their proximity to the proposed crater. First attention then was given that material located within the crater itself. As it happened, one site only was found to occur here. Secondary attention was given to material on or about the rim of the crater which would be subject to destruction or disturbance due to the fall back of debris raised by the explosions. In the latter category was one site--the largest of the four encountered. Sequentially third in importance, but actually considered much less so, were sites in the close vicinity which could conceivably be disturbed or destroyed either by the detonations or by some of the attendant activity at Ogotoruk Creek.

Sites were numbered serially as encountered. The prefix "CT" (for Cape Thompson) was used as a regional designation. Where a site might consist of a series of house pits, these were likewise numbered with the customary "H" per house. Any given unit chosen for excavation, whether house, cache, or whatever, was also given an excavation

unit number, or "X" number. If the unit were a house, then the house number would serve for an X number. Where the unit was equivocal as to its definition, or, in any case, was not a house pit, it was designated as "X-". The complete designation for a given house might be CT1, H1; for some other cultural feature, CT1, X2, and so on. Where indicated, a system of quadrants and arbitrary levels was maintained in excavation.

Summary of Results:

As nearly as possible work proceeded according to the schedule of priorities outlined above. The entire survey area was covered quite thoroughly by foot. Four sites were discovered within it. As time allowed, the survey was extended up Ogotoruk Valley for a distance of about six miles. For a somewhat lesser distance the main flanking ridges were reconnoitered and eminences spot-checked. The objective of these undertakings was to determine the true extent, both spatially and chronologically, of human occupation of the valley. Such information would have had an obvious bearing on any conclusions drawn regarding occupation of the main survey area. Nothing, beyond indications of recent, transient hunting activity, was found as a result of these efforts. Such occupation as there was of this region evidently was restricted to the seaside locations found in the main survey area.

Area of Primary Importance:--The Crater:

The one site here, designated CT1, consisted of three separate structural units strung out on the east bank of Ogotoruk Creek, beginning almost one thousand feet back from the ocean. These were

the only archaeological remains found in the crater area. They were completely excavated. Both north and south of these units were other irregular depressions occupying the same kind of position with respect to the creek bank and having the same aspect. These had been noted by Giddings and Bandi in their reconnaissance as well. Test pits put in them, however, revealed them to be only the abodes of ground squirrels. It may be noted here that in site, situation, and ultimate surface expression, many ground squirrel burrows are indistinguishable from old house and cache pits. The only way to determine their true nature is by test excavation. This mutual appreciation for the proper dwelling location is apparently recognized by the ground squirrels, since one commonly finds them occupying abandoned human habitation sites--much to the detriment of the archaeological record.

The yield of artifact material was exceptionally low at CT1, but was sufficient to indicate these units as being quite recent.

Area of Secondary Importance:--The Rim:

Site CT2, the only site in the rim area, consisted of the remains of six dwellings. This, by far, was the most extensive of the four sites. Because of this fact, plus its position, CT2 received the major amount of time and attention of the survey. As will be seen, the choice of units to investigate was somewhat narrower than would be indicated by the number of houses. The houses were aligned in a general east-west axis and faced the sea. They were numbered 1 through 6 from east to west. Two of the houses were so recent that their former owners were known. H6 formerly belonged to a Mr. Lane of Point Hope. H3 was the property of Charlie Jensen of Kotzebue.

The latter house, at least, was in repairable condition. It had evidently been occupied by transient hunters since Jensen abandoned it. Investigation of these houses was eschewed in favor of ones which were older in appearance. H5 might have been one of these, but examination of it was effectively precluded by a two-foot mantle of gravel fill which largely obscured it. The fill formed part of one of the connecting roads between the Chariot Site camp and the airstrip across Ogotoruk Creek. Accordingly then, excavation was confined to H4 (completely excavated), H1 (tested), and H2 (completely excavated). Artifact recovery was relatively abundant at CT2, especially so in the case of H2.

On the basis of evidence found in these excavations, it can be shown that with one exception all these units are very recent in origin. They apparently were occupied variously between 1890 and 1930. The exception, discussed later, occurred in connection with the excavation of H2.

Area of Tertiary Importance:--Outlying Sites:

Situated westward on the beach and probably well beyond any mechanical effects of the proposed detonation were two sites, CT3 and CT4. The first consisted of two recent-appearing house pits set quite close together located about a half-mile west of CT2. Both of these were tested with negative results. CT4 consisted of three house pits located to either side of a small intermittent stream approximately a quarter mile west of CT3. Tests here were also negative. That tests were negative in finding cultural remains is not to say that these were not man-made structures. It does, however, leave their definition something of a question. In view of their "safe" location

and the need for all hands to work at CT2, further work here--already shown to be unpromising--was halted.

Information derived from the survey indicates a very light--possibly seasonal--occupation of the lower end of Ogotoruk Valley. The evidence also indicates this to have been only in recent times. The results of the survey, though not spectacular, at least serve to fill in one of the numerous geographical lacunae on the northwest coast of Alaska. Fortunately, it does not appear that any really important manifestations of Alaskan prehistory are in danger of destruction by Project Chariot. Obviously, however, that this is the case could not have been known had no survey been performed.

Probably the safest reading of these data is the expectable one: caribou and seal were mainstays of the diet importantly supplemented by other available kinds of game. There appears to have been some alteration in the consumption of avifauna from earliest phases to the latest. Both House 4 and the last phase of House 2 yielded rather low percentages here. Perhaps this may be correlated with an increasing use of purchased foods which helped fill this supplemental gap. Still, the staples were those two species which occur in relative abundance and on their take the economy was based. This is still an immutable fact of life in most of the American Arctic.

One caution should be observed respecting the low percentages of whale bones recovered. Whaling as an activity of some importance is attested by the presence of whaling harpoon gear, by the use of whale bone for various implements and by the abundance of baleen. That few unaltered remains of whale were found is probably partly due at least to the practice of butchering near the scene of the kill. Meat, blubber, and baleen would be the items normally taken home, bones remaining at the site of the butchering.

SUMMARY AND CONCLUSIONS

Ogotoruk was not the site of a large Eskimo population, nor does there seem to be any great time depth. The first fact is not surprising; the second, however, is.

There are a number of areas in Arctic Alaska which have, over long periods of time, supported large populations. Cape Prince of Wales is one such, Point Hope is another, while Point Barrow furnishes a third example. Each of these is populated today. There are other similar coastal localities that until the recent past were also sites of fairly high population. Capes Kruzenstern and Espenberg exemplify such localities. The last have in common with the first named a very distinctive physiography and, therefore, very particular ecological attributes: each forms a point of land jutting out bastion-like into the ocean, and each is therefore a prime location for maritime hunters. On the basis of present evidence it appears that on the mainland at least, sites of this kind were the only ones that supported large populations in aboriginal times. Most

of the many other settlements that dotted the north coast of Alaska were of smaller size. Probably, too, many of these were more distinctly seasonal or occasional in the character of their utilization. The nature of all these settlements, their size and degree of permanency, may be taken as a direct response to their geographic setting. In the hierarchy of coastal Eskimo settlements, Ogotoruk apparently was among the smallest. As well as the limitations imposed by the relatively small valley, another factor probably acted to limit the size of Ogotoruk. This was its proximity to the large village of Tigara (Point Hope). It is known that in recent years most of the people who occupied the Ogotoruk hamlet were Point Hopers and folk from Kivalina. The Point Hope affiliation probably was the case also for the earlier phases (represented by Floors 1 through 4 of House 2) of its settlement. In a sense, then, Ogotoruk was tributary to, or more exactly, an outlier of the populous Tigara community. Other reasons for its low population appear obvious: There is no lagoon of such size at Ogotoruk Creek to allow sealing or fishing to become important activities. The creek itself apparently is of insufficient size to act as a salmon spawning stream. Finally, the valley, while of undoubted importance as a temporary halting place for caribou appears small to support large numbers for extended periods of time. There are valleys in northern Alaska which at times may contain caribou in numbers throughout the winter.

The reasons for Ogotoruk's low resident population, then, seem clearly related to the limitations of the immediate environment. However, particular note should be made of the phrase <u>resident population</u>. Because Ogotoruk was not capable of supporting a large resident population is not to say that it was unimportant in the Eskimo economy of the region. It undoubtedly was, but its major importance, in terms of numbers of people, was to other communities, most notably Tigara to the north and later to the Kivalina settlement. To these people and perhaps others, Ogotoruk Valley was one of a number of areas which supported their community.

Because, presumably, of our own agriculturally-based economy, we tend to think in rather restricted terms areally. A hunting (hunting, fishing, and gathering) economy though it may support a sedentary population of some size, nonetheless requires a very extensive area of production. From its center it sends tentacles out in all possible directions seeking the means for its support. The extent of the area used would vary with

population size, with the amount and dependability of game, with transportation facilities and so on. Nevertheless the picture holds: a hunting economy demands area. In the specific case of Ogotoruk, the presence of bird cliffs has evidently long drawn and continues to draw people seeking murre eggs. This activity is quite important but occupies only a brief period of the summer. In itself it would scarcely lead to the establishment of a permanent village. Undoubtedly some of the apparent tent sites at Ogotoruk reflect summer egg gathering by people resident elsewhere. The whitened antlers of caribou to be found about the valley attest the hunting of that species. Activities of these sorts do not leave behind much in the way of tangible remains, but this cannot diminish the importance of such an area to regional Eskimo economic life. A more appropriate perspective would thus reveal that Ogotoruk, while relatively insignificant as a settlement in itself, is to be equated with the outlying fields of a large farm. The hunting community is in no way coterminus with the limits of its village. Ogotoruk has apparently been a piece of the Tigara community for at least 100 years, probably more.

Returning to the question of time-depth in Ogotoruk's settlement, perhaps it may be concluded that permanent residence there was simply one of those ecological possibilities not exploited until recent times. That it occurred then and not earlier may have had its explanation in slightly changed economic practices of the 18th century or it may have been in response to some condition of stress felt at that time. However, that may be, settlement was permanent and continuous, apparently, from some time in the 18th century until very recent years.

Placing an approximate terminal date on the occupation of Houses 2, 3, and 4 of CT2 and House 1 of CT1 presents no problem. House 4 contained, among other pieces of similar or later time, two Prince Albert tobacco cans with a process patent date imprinted on them of 1907. House 3 was owned and lived in by Charlie Jensen of Kotzebue. According to Mr. Jensen this house was occupied from about 1912 until 1922. Evidence from the upper level of Floor 1, House 2, would indicate a similarly late date. H1 at CT1 contained virtually nothing of aboriginal manufacture and undoubtedly fits the same late period. Thus, the only evidence uncovered of earlier habitation came from the lower levels of House 2. The articles there associated with Late Floor 1 suggest the dating indicated above.

Shells of the 50 caliber rimfire rifle variety are good "index fossils." Their earliest widespread use would be about 1870. They continued in use until about 1900. The year 1880, then, represents a reasonable midpoint between these extremes and is a likely dating for Floor 1.

That a number of elements of distinctly aboriginal manufacture continued in use through the 1880's is an interesting and well-documented fact. Murdoch (1892:287), speaking of the Barrow area in the years 1881-1883, says, "These people still retain the art of making flint arrow and spear heads, and other implements such as the blades for skin scrapers..." Many of those purchased by him in his collecting were newly made and "as finely formed and neatly finished as any of the ancient ones." The instrument used was a flaker of the same type as described above, found in the second level of the living room of House 2. In speaking of firemaking, he states (ibid:289-291) that the fire drill was in use as late as 1837 at Barrow, but that at the time of his writing, flint and steel had supplanted it. Nelson (1899:75-76), in writing of the years 1877-1881 spent generally well south of Barrow on the coast, speaks of the fire drill as being "in common use throughout the region visited..." Nelson, it may be recalled, travelled as far north as Point Barrow. In speaking of the bow the same author notes (ibid:155) that "bows and arrows were still in common use for shooting birds and fish in some districts of northwestern Alaska during my residence there." Similarly, pottery manufacture, an occupation of women, was noted as being widespread "among the Eskimo with whom I came in contact" (ibid:201). Murdoch records that the use of pottery was extinct at Barrow (op. cit.:92), but this was evidently at variance with much of coastal Alaska at the time--specifically so at Ogotoruk Creek.

Ogotoruk then presents in miniature a picture of late prehistoric Eskimo culture leading without important break into contact with modern times. It appears evident that while many new material traits entered as a result of this contact, they were in the main those which were sensible in terms of the older culture. There is no evidence of drastic, disruptive, change. Rather, the new elements appear to have been easily integrated into the traditional culture. Eskimo culture here, if we may judge by material remains, maintained its autochthonous character well into the 20th century.

The first major breakdown of Eskimo culture of northwestern Alaska is probably to be correlated with the drawing-in of these outlying hamlets to larger communities with their stores, churches and so on.

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